



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Jherson
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Application Serial No. 09/388,063
Filing Date August 30, 1999
Inventor Vishnu K. Agarwal et al.
Assignee Micron Technology, Inc.
Group Art Unit 2815
Examiner J. Fenty
Attorney's Docket No. MI22-1196
Title: Capacitors Having a Capacitor Dielectric Layer Comprising a Metal Oxide
Having Multiple Different Metals Bonded With Oxygen

RESPONSE TO DECEMBER 20, 2000 OFFICE ACTION

To: Assistant Commissioner for Patents
Washington, D.C. 20231

From: Mark S. Matkin (Tel. 509-624-4276; Fax 509-838-3424)
Wells, St. John, Roberts, Gregory & Matkin P.S.
601 West First Avenue, Suite 1300
Spokane, WA 99201-3828

Responsive to the Office Action dated December 20, 2000, Applicant
amends and remarks as follows:

AMENDMENTS

In the Specification

Please replace the last paragraph on page 6, beginning at line 15 and
ending at page 7, line 2 with the following clean replacement paragraph in
accordance with 37 C.F.R. § 1.121(b)(1)(ii):

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A high k capacitor dielectric region 35 is positioned between first capacitor electrode 24 and second capacitor electrode 26. Capacitor dielectric region 35 comprises a layer of metal oxide having multiple different metals bonded with oxygen, for example those materials described above. Most preferably and as shown, capacitor dielectric region 35 consists essentially of such layer, meaning no other layers are received intermediate first electrode 24 and second electrode 26 which meaningfully impact the operation or capacitance of capacitor 32. In accordance with but one aspect of the invention, the metal oxide layer having multiple different metals bonded with oxygen has varying stoichiometry across its thickness. In other words, the stoichiometry in such layer is not substantially constant throughout the layer.